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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/811,838

DATE: 04/02/2001

TIME: 11:10:32

Input Set : A:\Ut1811.app

Output Set: N:\CRF3\04022001\I811838.raw

3 <110> APPLICANT: Miller, Duane D.  
 4 Tigy, Gabor  
 5 Dalton, James T.  
 6 Sardar, Vineet M.  
 7 Elrod, Don B.  
 8 Xu, Huiping  
 9 Baker, Daniel L.  
 10 Wang, Dean  
 11 Liliom, Karoly  
 12 Fischer, David J.  
 13 Virag, Tamas  
 14 Nusser, Nora  
 16 <120> TITLE OF INVENTION: LPA RECEPTOR AGONISTS AND ANTAGONISTS AND METHODS OF  
 17 USE  
 19 <130> FILE REFERENCE: 20609/181  
 C--> 21 <140> CURRENT APPLICATION NUMBER: US/09/811,838  
 C--> 22 <141> CURRENT FILING DATE: 2001-03-19  
 24 <150> PRIOR APPLICATION NUMBER: 60/190,370  
 25 <151> PRIOR FILING DATE: 2000-03-17  
 27 <160> NUMBER OF SEQ ID NOS: 26  
 29 <170> SOFTWARE: PatentIn Ver. 2.1  
 31 <210> SEQ ID NO: 1  
 32 <211> LENGTH: 1095  
 33 <212> TYPE: DNA  
 34 <213> ORGANISM: Homo sapiens  
 36 <400> SEQUENCE: 1  
 37 atggctgcca tctctactc catccctgta atttcacagc cccagttcac agccatgaat 60  
 38 gaaccacagt gcttctacaa cgagttccatt gccttctttt ataaccgaag tggaaagcat 120  
 39 cttgccacag aatggAACAC agtcagcaag ctgggtatgg gacttggaa cactgtttgt 180  
 40 atcttcatca ttttggccaa ccttattggc atgggtggcaa tctatgtcaa cggccgttcc 240  
 41 cattttctca ttattaccc aatggctaat ctggctgtcg cagacttctt tgctgggttg 300  
 42 gctacttct atctcatgtt caacacagga cccaatactc ggagactgac tgtagcaca 360  
 43 tggctcctgc gtcaggcct cattgacacc agcctgacgg catctgtggc caacttaactg 420  
 44 gctattgcaa tcgagaggca cattacgggtt ttccgcatgc agctccacac acggatgagc 480  
 45 aaccggcggg tagtgggtgt cattgtggc atctggacta tggccatcg tatgggtgt 540  
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 47 ctctacagtg actttaactt agtcttctgg gccattttca acttggtgac cttttgtgtt 660  
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 49 cggcatagtt ctggaccccg gcggatcg gataccatga tgagtcttct gaagactgtg 780  
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 51 gacgtgtgt gtccacagt cgacgtgtcg gcttatgaga aattcttct tctcctgtct 900  
 52 gaattcaact ctgcccatt tactcctacc ggcacaaaga aatgagcgcc 960  
 53 acctttaggc agatcctctg ctgcccagc ggtgagaacc ccacccggccc cacagaaagc 1020  
 54 tcagaccgct cggcttcctc cctcaaccac accatcttgg ctggagttca cagcaatgac 1080  
 55 cactctgtgg ttttag 1095  
 58 <210> SEQ ID NO: 2  
 59 <211> LENGTH: 364

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Input Set : A:\Ut1811.app  
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60 <212> TYPE: PRT  
 61 <213> ORGANISM: Homo sapiens  
 63 <400> SEQUENCE: 2  
 64 Met Ala Ala Ile Ser Thr Ser Ile Pro Val Ile Ser Gln Pro Gln Phe  
 65 1 5 10 15  
 67 Thr Ala Met Asn Glu Pro Gln Cys Phe Tyr Asn Glu Ser Ile Ala Phe  
 68 20 25 30  
 70 Phe Tyr Asn Arg Ser Gly Lys His Leu Ala Thr Glu Trp Asn Thr Val  
 71 35 40 45  
 73 Ser Lys Leu Val Met Gly Leu Gly Ile Thr Val Cys Ile Phe Ile Met  
 74 50 55 60  
 76 Leu Ala Asn Leu Leu Val Met Val Ala Ile Tyr Val Asn Arg Arg Phe  
 77 65 70 75 80  
 79 His Phe Pro Ile Tyr Tyr Leu Met Ala Asn Leu Ala Ala Asp Phe  
 80 85 90 95  
 82 Phe Ala Gly Leu Ala Tyr Phe Tyr Leu Met Phe Asn Thr Gly Pro Asn  
 83 100 105 110  
 85 Thr Arg Arg Leu Thr Val Ser Thr Trp Leu Leu Arg Gln Gly Leu Ile  
 86 115 120 125  
 88 Asp Thr Ser Leu Thr Ala Ser Val Ala Asn Leu Leu Ala Ile Ala Ile  
 89 130 135 140  
 91 Glu Arg His Ile Thr Val Phe Arg Met Gln Leu His Thr Arg Met Ser  
 92 145 150 155 160  
 94 Asn Arg Arg Val Val Val Val Ile Val Val Ile Trp Thr Met Ala Ile  
 95 165 170 175  
 97 Val Met Gly Ala Ile Pro Ser Val Gly Trp Asn Cys Ile Cys Asp Ile  
 98 180 185 190  
 100 Glu Asn Cys Ser Asn Met Ala Pro Leu Tyr Ser Asp Ser Tyr Leu Val  
 101 195 200 205  
 103 Phe Trp Ala Ile Phe Asn Leu Val Thr Phe Val Val Met Val Val Leu  
 104 210 215 220  
 106 Tyr Ala His Ile Phe Gly Tyr Val Arg Gln Arg Thr Met Arg Met Ser  
 107 225 230 235 240  
 109 Arg His Ser Ser Gly Pro Arg Arg Asn Arg Asp Thr Met Met Ser Leu  
 110 245 250 255  
 112 Leu Lys Thr Val Val Ile Val Leu Gly Ala Phe Ile Ile Cys Trp Thr  
 113 260 265 270  
 115 Pro Gly Leu Val Leu Leu Leu Asp Val Cys Cys Pro Gln Cys Asp  
 116 275 280 285  
 118 Val Leu Ala Tyr Glu Lys Phe Phe Leu Leu Ala Glu Phe Asn Ser  
 119 290 295 300  
 121 Ala Met Asn Pro Ile Ile Tyr Ser Tyr Arg Asp Lys Glu Met Ser Ala  
 122 305 310 315 320  
 124 Thr Phe Arg Gln Ile Leu Cys Cys Gln Arg Ser Glu Asn Pro Thr Gly  
 125 325 330 335  
 127 Pro Thr Glu Ser Ser Asp Arg Ser Ala Ser Ser Leu Asn His Thr Ile  
 128 340 345 350  
 130 Leu Ala Gly Val His Ser Asn Asp His Ser Val Val  
 131 355 360

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Input Set : A:\Ut1811.app

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134 <210> SEQ ID NO: 3  
 135 <211> LENGTH: 1056  
 136 <212> TYPE: DNA  
 137 <213> ORGANISM: Homo sapiens  
 139 <400> SEQUENCE: 3

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 141 ggccaaagagc tcagtcctca ctggcgccc aaggatgtgg tcgtgggtgc actggggctg 120  
 142 accgtcagcg tgctgggtgt gctgaccaat ctgctggta tagcagccat cgccctccaaac 180  
 143 cgccgcttcc accagccat ctactacgt ctggcaatc tggccggcgc tgaccttcc 240  
 144 gccccggctgg cctacccctt cctcatgttc cacactggtc cccgcacagc ccgactttca 300  
 145 cttgagggtctt ggttcctgcgc gcaaggcttgc ctggacacaa gcttcactgc gtcgggtggcc 360  
 146 acactgttgg ccatcgccgt ggagccgcac cgcagtgtga tggccgtgca gtcgcacagc 420  
 147 cgccctcccc gttggccgtt ggtcatgttc atgtggccg tgggggtggc tgccctggc 480  
 148 ctggggctgc tgcctgcca ctcctggcac tgcctctgtt ccctggaccg ctgctcacgc 540  
 149 atggccacccc tgctcagccg ctcctatttgc gccgtctggg ctctgtcgag cctgcttgc 600  
 150 ttccctgtca tgggtggctgt gtacacccgc atttttcttct acgtgcggcg gogagtgca 660  
 151 cgcatggcag agcatgtcag ctgcacccccc cgctaccgag agaccacgct cagcctggc 720  
 152 aagactgttgc tcatcatcct gggggcgttc gtggctgtgtt ggacaccagg ccaggtggta 780  
 153 ctgctccctgg atggtttagg ctgtgagtcc tgcaatgtcc tggctgtaga aaagtacttc 840  
 154 ctactgttgg ccgaggccaa ctcactggtc aatgctgtctg tgtactcttgc cggagatgt 900  
 155 gagatgcgcc gcaccttccg cgccttctc tgctgcgcgt gctccgcac gtccacccgc 960  
 156 gagtctgtcc actatacatac ctctgcccag ggaggtgcac gcaactcgat catgtttccc 1020  
 157 gagaacggcc acccactgtat ggactccacc cttag 1056

160 <210> SEQ ID NO: 4  
 161 <211> LENGTH: 351  
 162 <212> TYPE: PRT  
 163 <213> ORGANISM: Homo sapiens  
 165 <400> SEQUENCE: 4

166 Met Val Ile Met Gly Gln Cys Tyr Tyr Asn Glu Thr Ile Gly Phe Phe  
 167 1 5 10 15  
 169 Tyr Asn Asn Ser Gly Lys Glu Leu Ser Ser His Trp Arg Pro Lys Asp  
 170 20 25 30  
 172 Val Val Val Val Ala Leu Gly Leu Thr Val Ser Val Leu Val Leu Leu  
 173 35 40 45  
 175 Thr Asn Leu Leu Val Ile Ala Ala Ile Ala Ser Asn Arg Arg Phe His  
 176 50 55 60  
 178 Gln Pro Ile Tyr Tyr Leu Leu Gly Asn Leu Ala Ala Ala Asp Leu Phe  
 179 65 70 75 80  
 181 Ala Gly Val Ala Tyr Leu Phe Leu Met Phe His Thr Gly Pro Arg Thr  
 182 85 90 95  
 184 Ala Arg Leu Ser Leu Glu Gly Trp Phe Leu Arg Gln Gly Leu Leu Asp  
 185 100 105 110  
 187 Thr Ser Leu Thr Ala Ser Val Ala Thr Leu Leu Ala Ile Ala Val Glu  
 188 115 120 125  
 190 Arg His Arg Ser Val Met Ala Val Gln Leu His Ser Arg Leu Pro Arg  
 191 130 135 140  
 193 Gly Arg Val Val Met Leu Ile Val Gly Val Trp Val Ala Ala Leu Gly  
 194 145 150 155 160  
 196 Leu Gly Leu Leu Pro Ala His Ser Trp His Cys Leu Cys Ala Leu Asp

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197	165	170	175
199	Arg Cys Ser Arg Met Ala Pro Leu Leu Ser Arg Ser Tyr	Leu Ala Val	
200	180	185	190
202	Trp Ala Leu Ser Ser Leu Leu Val Phe Leu Leu Met Val	Ala Val Tyr	
203	195	200	205
205	Thr Arg Ile Phe Phe Tyr Val Arg Arg Arg Val Gln Arg	Met Ala Glu	
206	210	215	220
208	His Val Ser Cys His Pro Arg Tyr Arg Glu Thr	Thr Leu Ser Leu Val	
209	225	230	235
211	Lys Thr Val Val Ile Ile Leu Gly Ala Phe Val Val Cys	Trp Thr Pro	
212	245	250	255
214	Gly Gln Val Val Leu Leu Leu Asp Gly Leu Gly Cys Glu	Ser Cys Asn	
215	260	265	270
217	Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Ala Glu	Ala Asn Ser	
218	275	280	285
220	Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu	Met Arg Arg	
221	290	295	300
223	Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln	Ser Thr Arg	
224	305	310	315
226	Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly	Ala Ser Thr Arg	
227	325	330	335
229	Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Asp Ser	Thr Leu	
230	340	345	350
233	<210> SEQ ID NO: 5		
234	<211> LENGTH: 1062		
235	<212> TYPE: DNA		
236	<213> ORGANISM: Homo sapiens		
238	<400> SEQUENCE: 5		
239	atgaatgagt gtcactatga caagcacatg gactttttt ataataggag	caacactgtat	60
240	actgtcgatg actggacagg aacaaagctt gtgattgttt tggatgtttc	gacgttttc	120
241	tgcctgtta ttttttttc taattctctg gtcatgcgg cagtgtatcaa	aaacagaaaaa	180
242	tttcatttcc ccttctacta cctgttggtct aatttagctg ctggcgattt	cttcgctgg	240
243	attgcctatg tattcctgtat gtttaacaca ggcggcgtttt caaaaacttt	gactgtcaac	300
244	cgctggtttc tccgtcaggg gcttctggac agtagcttgc ctgcctccct	caccaacttg	360
245	ctgggtatcg ccgtggagag gcacatgtca atcatgagga tgcgggtcca	tagcaacctg	420
246	accaaaaaaa gggtgacact gtcattttt cttgtctggg ccatcgccat	ttttatgggg	480
247	gcggtccccca cactgggtct gaattgcctc tgcaacatct ctgcctgtc	ttccctggcc	540
248	cccatttaca gcaggaggta ccttggtttc tggacagtgtt ccaacccat	ggccttcctc	600
249	atcatggttt tggatgtacct gggatctac gtgtacgtca agaggaaaac	caacgtcttg	660
250	tcccgccata caagtgggtc catcagccgc cggaggacac ccatgaagct	aatgaagacg	720
251	gtgtactg tcttaggggc gtttgggtt tgctggaccc cgggcctgg	ggttctgtc	780
252	ctcgacggcc tgaactgcag gcagtgtggc gtgcagcatg tgaaaagggt	gttccctgtc	840
253	ctggcgctgc tcaactccgt cgtgaacccc atcatctact cctacaagga	cgaggacatg	900
254	tatggcacca tgaagaagat gatctgctgc ttctctcagg agaaccaggaa	gaggcgtccc	960
255	tctcgcatcc cctccacagt cctcagcagg agtgcacacag gcagccagta	catagaggat	1020
256	agtattagcc aagggtcgat ctgcataaaa agcacttcct aa		1062
259	<210> SEQ ID NO: 6		
260	<211> LENGTH: 353		
261	<212> TYPE: PRT		

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Output Set: N:\CRF3\04022001\I811838.raw

262 <213> ORGANISM: Homo sapiens  
 264 <400> SEQUENCE: 6  
 265 Met Asn Glu Cys His Tyr Asp Lys His Met Asp Phe Phe Tyr Asn Arg  
 266 1 5 10 15  
 268 Ser Asn Thr Asp Thr Val Asp Asp Trp Thr Gly Thr Lys Leu Val Ile  
 269 20 25 30  
 271 Val Leu Cys Val Gly Thr Phe Phe Cys Leu Phe Ile Phe Phe Ser Asn  
 272 35 40 45  
 274 Ser Leu Val Ile Ala Ala Val Ile Lys Asn Arg Lys Phe His Phe Pro  
 275 50 55 60  
 277 Phe Tyr Tyr Leu Leu Ala Asn Leu Ala Ala Asp Phe Phe Ala Gly  
 278 65 70 75 80  
 280 Ile Ala Tyr Val Phe Leu Met Phe Asn Thr Gly Pro Val Ser Lys Thr  
 281 85 90 95  
 283 Leu Thr Val Asn Arg Trp Phe Leu Arg Gln Gly Leu Leu Asp Ser Ser  
 284 100 105 110  
 286 Leu Thr Ala Ser Leu Thr Asn Leu Leu Val Ile Ala Val Glu Arg His  
 287 115 120 125  
 289 Met Ser Ile Met Arg Met Arg Val His Ser Asn Leu Thr Lys Lys Arg  
 290 130 135 140  
 292 Val Thr Leu Leu Ile Leu Leu Val Trp Ala Ile Ala Ile Phe Met Gly  
 293 145 150 155 160  
 295 Ala Val Pro Thr Leu Gly Trp Asn Cys Leu Cys Asn Ile Ser Ala Cys  
 296 165 170 175  
 298 Ser Ser Leu Ala Pro Ile Tyr Ser Arg Ser Tyr Leu Val Phe Trp Thr  
 299 180 185 190  
 301 Val Ser Asn Leu Met Ala Phe Leu Ile Met Val Val Val Tyr Leu Arg  
 302 195 200 205  
 304 Ile Tyr Val Tyr Val Lys Arg Lys Thr Asn Val Leu Ser Pro His Thr  
 305 210 215 220  
 307 Ser Gly Ser Ile Ser Arg Arg Arg Thr Pro Met Lys Leu Met Lys Thr  
 308 225 230 235 240  
 310 Val Met Thr Val Leu Gly Ala Phe Val Val Cys Trp Thr Pro Gly Leu  
 311 245 250 255  
 313 Val Val Leu Leu Leu Asp Gly Leu Asn Cys Arg Gln Cys Gly Val Gln  
 314 260 265 270  
 316 His Val Lys Arg Trp Phe Leu Leu Ala Leu Leu Asn Ser Val Val  
 317 275 280 285  
 319 Asn Pro Ile Ile Tyr Ser Tyr Lys Asp Glu Asp Met Tyr Gly Thr Met  
 320 290 295 300  
 322 Lys Lys Met Ile Cys Cys Phe Ser Gln Glu Asn Pro Glu Arg Arg Pro  
 323 305 310 315 320  
 325 Ser Arg Ile Pro Ser Thr Val Leu Ser Arg Ser Asp Thr Gly Ser Gln  
 326 325 330 335  
 328 Tyr Ile Glu Asp Ser Ile Ser Gln Gly Ala Val Cys Asn Lys Ser Thr  
 329 340 345 350  
 331 Ser  
 335 <210> SEQ ID NO: 7  
 336 <211> LENGTH: 1260

VERIFICATION SUMMARY DATE: 04/02/2001  
PATENT APPLICATION: US/09/811,838 TIME: 11:10:33

Input Set : A:\Ut1811.app  
Output Set: N:\CRF3\04022001\I811838.raw

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L:22 M:271 C: Current Filing Date differs, Replaced Current Filing Date